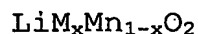


Claims

1. A cathode active material for a lithium secondary cell comprising a lithium-transition metal oxide capable of lithium ion intercalation/deintercalation, characterized by further comprising a lithium manganese oxide having a layered structure represented by the following formula 1 as an additive:

[formula 1]



wherein, x is a number satisfying $0.05 \leq x < 0.5$, and M is at least one metal selected from the group consisting of Cr, Al, Ni, Mn and Co.

2. The cathode active material according to claim 1, wherein the content of the lithium manganese oxide having a layered structure is 1 to 50 parts by weight based on 100 parts by weight of the lithium-transition metal oxide.

3. The cathode active material according to claim 1, wherein the lithium manganese oxide having a layered structure is $\text{LiCr}_{0.1}\text{Mn}_{0.9}\text{O}_2$.

4. The cathode active material according to claim 1, wherein the lithium manganese oxide is at least one material selected from the group consisting of:

LiCoO_2 , LiNiO_2 , LiMnO_2 , LiMn_2O_4 , $\text{Li}(\text{Ni}_a\text{Co}_b\text{Mn}_c)\text{O}_2$, $\text{LiNi}_{1-d}\text{Co}_d\text{O}_2$, $\text{LiCo}_{1-d}\text{Mn}_d\text{O}_2$, $\text{LiNi}_{1-d}\text{Mn}_d\text{O}_2$, $\text{Li}(\text{Ni}_x\text{Co}_y\text{Mn}_z)\text{O}_4$, $\text{LiMn}_{2-n}\text{Ni}_n\text{O}_4$, $\text{LiMn}_{2-n}\text{Co}_n\text{O}_4$, LiCoPO_4 and LiFePO_4 , wherein $0 < a < 1$, $0 < b < 1$, $0 < c < 1$, $a+b+c=1$, $0 \leq d < 1$, $0 < x < 2$, $0 < y < 2$,

$0 < z < 2$, $x+y+z=2$, and $0 < n < 2$.

5. A lithium secondary cell comprising a cathode, an anode, a separator, and a non-aqueous electrolyte solution containing a lithium salt and an electrolyte compound, wherein the cathode comprises a cathode active material for a lithium secondary cell defined in any one of claims 1 to 4.

10 6. The lithium secondary cell according to claim 5, wherein the lithium manganese oxide having a layered structure represented by the following formula 1, which is contained in the cathode active material, is changed into a lithium manganese oxide having a spinel structure represented by the following formula 2 by the first charge/discharge cycle of the lithium secondary cell:

[formula 1]



[formula 2]

20 $\text{LiM}_{2x}\text{Mn}_{2-2x}\text{O}_4$

wherein, x is a number satisfying $0.05 \leq x < 0.5$, and M is at least one metal selected from the group consisting of Cr, Al, Ni, Mn and Co.

25 7. The lithium secondary cell according to claim 5, wherein the lithium salt is at least one selected from the group consisting of LiClO_4 , LiCF_3SO_3 , LiPF_6 , LiBF_4 , LiAsF_6 and $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and the electrolyte compound is at least one carbonate selected from the group consisting of
30 ethylene carbonate (EC), propylene carbonate (PC), gamma-

butyrolactone (GBL), diethyl carbonate (DEC), dimethyl carbonate (DMC), ethylmethyl carbonate (EMC) and methylpropyl carbonate (MPC).